

A depolarizer 11 is inserted between an optical branch unit 2 and a polarization filter 3, a depolarizer 12 and a polarization filter 14 are inserted between an optical phase modulator 5 and a quarter-wave plate 16, and a depolarizer 13 and a polarization filter 15 are inserted between the other branch end of the optical branch unit 4 and a quarter-wave plate 17. The optical branch unit 2 and the optical phase modulator 5 are formed by single mode optical fibers, and single mode optical fibers are used to connect between optical elements, thus providing an arrangement which is inexpensive as a whole.

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